7th Meeting of the Inter Regional Coordination Committee (IRCC-7)

Mexico City, Mexico, 1-3 June 2015

Paper for Consideration by IRCC

Proposal to add the topic of satellite-derived bathymetry as a standing agenda item at all future IRCC meetings

Submitted by:	United States of America and Canada
Executive Summary:	Satellite-derived bathymetry is of interest to the IHO and Member States for its promise to improve hydrography and cartography. As a developing science, the Member States of the IHO should consider adding a standing agenda item to all IRCC meetings until such time as the membership may determine it is no longer needed.
Related Documents:	Proposals-Conf.EX5/G/03 PRO 6 Development of an IHO Satellite-Derived Bathymetry and Charting Program for Remote Areas 09-USCHC38-INF5 Presentation on Satellite-derived bathymetry (SDB) GEBCO Cookbook Chapter 11.0 "LANDSAT 8 Satellite-Derived Bathymetry" CBSC-13 INF Paper on SDB workshop planned in summer 2015 (to be submitted to CBSC)
Related Projects:	Member States (including USA, France, Canada and others) are conducting ongoing research and efforts to test and apply satellite imagery as a chart evaluation tool and as an additional resource for prioritizing hydrographic surveys. Training course on SDB offered by NOAA and UNH in summer 2015 (Silver Spring, Maryland)

Introduction/Background

1. As summarized by France in PRO 6 to the 5th EIHC:

"*Satellite-derived bathymetry (SDB) has been on the table of different RHCs, CBSC and IRCC for a couple of years. This issue was also raised by the IHB at IRCC-5 but nothing is done in practice at the IHO level.*

Thanks to new technological developments and available sources of satellite information, SDB offers the possibility to assess in a reasonable time the quality of hydrography over large areas, poorly charted or charted a long time ago. Results would be of considerable value in giving Coastal States a clearer view of the status of hydrography in the waters under their responsibility, and for establishing a focused hydrographic programme based on priority requirements and objective rationale extracted from this reconnaissance charting.

In a capacity building perspective, this approach could be very relevant in countries where requirements for land surveying and environment monitoring have led to the development of remote sensing processing capabilities. Indeed, SDB should not be seen as an "all-in-one" solution, impeding the development of classic hydrographic surveying capabilities, even at the limited level required at least for critical areas and / or checking purposes. Nevertheless, the perspective of being able to collect, on a wide scale, a complete set of information usable for establishing a focused strategy of modernization of nautical charts, in a reasonable amount of time and for a foreseeable cost, can be a strong driver for motivating further funding of a regional programme of renovation of charts."

Analysis/Discussion

2. The United States and Canada are testing and utilizing Satellite-Derived Bathymetry (SDB) as a tool for assessing the quality of hydrography in poorly charted areas. There are various satellite platforms (LANDSAT, SPOT, Sea WiFs, MODIS Aqua, etc.) and data is accessible with different characteristics (such as resolution and cost). While GEBCO Cookbook addresses the application of LANDSAT-8, new knowledge is continually being developed from case studies on the use of SDB world-wide.

3. SDB is one of many non-traditional sources of hydrographic data available, including Crowd Sourcing referenced in PRO 4, as well as others that are very promising and useful. How to appropriately take advantage of these additional sources of hydrographic data while understanding their limitations is a larger strategic issue for the IHO.

4. In the proceedings of EIHC5, the IHB noted SDB should be considered in light of Decision 17 of the XVIIIth IHC about progressing whatever actions are required to improve the collection, quality and availability of hydrographic data worldwide.

5. As the Member States of the IHO continue to improve the science and application of SDB to hydrography and cartography, they should have a collective interest in building a body of knowledge of SDB, sharing experiences and lessons learned, and contributing to the advancement of the methodology and utility of SDB. This could well be accomplished at the IHO's annual IRCC meetings.

Recommendations

6. The USCHC recommends that SDB be added as a standing agenda item at IRCC meetings to allow Member States an opportunity to share the latest results and information concerning the applications of SDB.

Action required of IRCC

7. The IRCC is invited to
   a) **note** this report;
   b) **endorse** this proposal.